MCI Communications
Corporation

MCI

1801 Pennsylvania Avenue, NW
Washington, DC 20006

EX PARTE OR LATE ORIGINAL

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March 12, 1999

Magalie Roman Salas, Secretary
Federal Communications Commission
445 12th Street, S.W., TW-A325
Washington, D.C. 20554

Re: Ex Parte Submission
Federal-State Joint Board on Universal Service; CC Docket No. 96-45
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs; CC Docket No. 97-160

Dear Ms. Salas:

Attached is a zipped file containing a Word document that describes all of the changes in the HAI expense modules since v5.0a, as well as a hard copy of that document. In addition, new copies of the DZ and WC expense modules are included in the zipped file. These differ from the modules filed on February 26 in that they incorporate several minor changes suggested in the GTE ex parte of February 12, as well as a few non-results-affecting cosmetic changes to the WC module that slightly reduce its size.

Respectfully submitted,

Chris Frentrup
Senior Economist
MCI WorldCom
1801 Pennsylvania Ave., NW
Washington, DC 20006
(202) 887-2731

cc: Letter and Attachment only -Mark Kennet, Bob Loube, Bill Sharkey

Letter, Attachment, and Disk - Sheryl Todd, ITS

Expense module change history since 5.0a – Wire Center

1 Added "PerLine" worksheet, permitting entry of per-line expenses for each expense category.

2 Added input cells in "Inputs" worksheet for residential and business DEMs per line.

3 Added columns to "Investment Input" worksheet to receive average density for each wire center and number of signaling links for each wire center. See #12 below.

4 Added calculation of total annual business and residential DEMs in columns CL, CM of "Investment Input" worksheet.

5 Corrected effect of erroneous relative reference to Inputs!H70 previously in column DD of "Investment Input" worksheet.

6 Corrected error in calculation of feeder manhole sharing, column DK of "Investment Input" worksheet.

7 Modified all formulae in "Investment Input" worksheet that use structure sharing percentages to use new calculated average wire center density in column CE. This implements the correction described in number 5 above.

8 Applied structure sharing percent to placement components of feeder conduit (Column DO).

9 Changed signaling links unit cost calculation (Investment Input!HI) to use new signaling links input value from SIO module.

10 Reversed changes 3, 4, 7, and 9 above (shown in bold italics) to accommodate change 11 without requiring changes to interface. Changed formulae left in red type to facilitate restoring these changes when interface changes are made. These changes reinstated on 11/18/98, using weighted average structure sharing percentages per #12 below.

11 Added alternative cable maintenance factors to "96 Actuals" worksheet, separately for fiber and copper, and re-oriented all calculations using cable maintenance factors to the appropriate alternative factor. Note that, by default, both copper and fiber factors are equated to the calculated ARMIS value. User can manually enter an alternative value in any of the six cells in columns H and I to override.

12 Modified change #3 above to add six new columns (CE-CJ) on investment inputs worksheet to receive weighted average structure sharing percentages for each structure category.

13 Enhanced the module to reflect use of accelerated depreciation (IRS MACRS) for tax purposes and Equal Life Groups (ELG) for regulatory depreciation purposes. Deleted old CCCFactor sheet and replaced it with CGSCurves, IRSDeprec, KCCFactor and KF sheets. Rather than using whole year interpolation to determine capital annual charge factors, the columns CQ to FH and FU to GB in the Investment Inputs sheet now refer to the computed charge factors located in the KF sheet. (Fuller description attached.)

14 Corrected operator wages per line to divide by 12 to reflect monthly, rather than annual amount and updated data source to 1996.

15 Modified method of allocation of general support costs to non-loop UNEs (Investment Input!GP:GZ) to make the calculation in the wire center and density zone modules consistent. This also required a change to the density zone module.

16 Updated all version number references to version 5/FCC.

17 Added local tandem costs to USF unit cost calculation (Investment Inputs!HY)

18 Investment Inputs!DO, changed formula to apply separate copper and fiber maintenance factors to copper and fiber placement investments, respectively

19 Investment Inputs!DC, changed formula to use composite cable maintenance factor for passive SAI investment

20 Changed formula at Investment Inputs!FI to use new wire center weighted average structure sharing percentages

21 Changed projection life for NID and SAI to a user-adjustable default of 19 years (Inputs!K25). Placed drop into same depreciation life category. Deleted calculations related to lives of "average" metallic cable.

22 Corrected treatment of capital carrying cost for land to reflect overall debt/equity percentages (Investment Inputs!DR)

23 Classified signaling links (Investment Inputs!DW) and operator trunks (Investment Inputs!FD) to have capital cost annual charge factors equal to the average of the annual charge factors for buried, aerial and underground non-metallic cable.

24 Classify MDF/protector, STPs and SCPs as in Account 2212. (Investment Inputs!DT, DV and DX)

Expense module change history since 5.0a – Density Zone

1 Added "PerLine" worksheet, permitting entry of per-line expenses for each expense category.

2 Corrected "USOA Detail" worksheet cell G16 to apply divisor of 1000 to all terms in the formula

3 Added alternative cable maintenance factors to "96 Actuals" worksheet, separately for fiber and copper, and re-oriented all calculations using cable maintenance factors to the appropriate alternative factor. Note that, by default, both copper and fiber factors are equated to the calculated ARMIS value. User can manually enter an alternative value in any of the six cells in columns H and I to override.

4 Enhanced the module to reflect use of accelerated depreciation (IRS MACRS) for tax purposes and Equal Life Groups (ELG) for regulatory depreciation purposes. Deleted old CCCFactor sheet and replaced it with CGSCurves, IRSDeprec, KCCFactor and KF sheets. Rather than using whole year interpolation to determine capital annual charge factors, the "Levelized Cost of Capital" lines in UNE sheets to refer to expanded KF array in the KF sheet to determine appropriate annual charge factor. (Fuller description attached.)

5 Correction to "Levelized Cost of Capital" formula for land in EO Switching sheet. Formula previously assumed excessive equity fraction of capital. Correct ACF for land is GrUpROR.

6 "Levelized Cost of Capital" formulae for underground copper or fiber placement or trenching in Feeder and Distribution sheets incorrectly applied cable depreciation rates. Correct depreciation rate to apply is that for conduit.

7 Added new inputs on Inputs!F30:F31 for res and bus DEMs per line, and added calculation of total annual res and bus DEMs in Investment Inputs!CF and CG.

8 Corrected operator wages per line to divide by 12 to reflect monthly, rather than annual amount and updated data source to 1996.

9 Corrected depreciation factor calculation in "USOA Detail" worksheet to reflect new method of calculating depreciation.

10 Modified method of allocation of general support costs to non-loop UNEs (Exp by Service, rows 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210) to make the calculation in the wire center and density zone modules consistent. This also required a change to the wire center module.

11 Updated all version number references to version 5/FCC.

12 Changed formula to use composite cable maintenance factor for passive SAI investment in concentrator worksheet, at rows 20 and 55.

13 Changed formula to use composite cable maintenance factor for passive SAI investment, in concentrator worksheet, at rows 20 and 55.

Changes in Capital Annual Charge Factor Calculations to Reflect Accelerated Tax Depreciation and ELG Regulatory Depreciation

Because ILECs realize substantial reductions in the present value of their corporate income tax obligations through their use of IRS-permitted accelerated depreciation for tax purposes, and because their current practice is to use Equal Life Group (ELG) depreciation for regulatory purposes, the HAI Model expense modules have been enhanced to incorporate both of these capital recovery features. The introduction of accelerated tax depreciation tends to reduce the levelized capital annual charge factors (CACFs) computed by the module by about 7%. But because of the levelization process and the fact that the current proxy models are static models (i.e., their outputs and capital inputs do not vary over time), the introduction of ELG depreciation has no appreciable effect. Nevertheless, ELG depreciation is incorporated into the HAI expense module in anticipation that it will be useful in the future.

To effect these changes in the expense modules, the Inputs sheet was edited to accept augmented information about the depreciation characteristics to be assumed for each plant category; the old CCCFactor sheet has been deleted and four sheets are added in its place. These are the CGSCurves sheet, IRSDeprec sheet, KCCFactor sheet and KF sheet. In addition, because the KCCF sheet calculates CACFs directly based on the precise value for projection life (rather than through whole year interpolation), edits were made to the Investment Inputs sheet (WC), the USOA sheet (DZ) and the UNE sheets (DZ) to simplify references to the CACFs contained in the KF sheet.

The new process used to calculate CACFs is as follows:

1. Entries for each plant category in the depreciation table of the Inputs sheet now include a code to represent the IRS's permitted MACRS depreciation life classification, a choice of whether the category should be depreciated for regulatory purposes on a square life (SL) or ELG basis, and entries for the c, log g and log s parameters that would be used to specify the "Bell Standard" survival curve associated with that plant category. In addition, there is a switch (Inputs!J38) to indicate whether regulatory depreciation or MACRS should be used for tax purposes. The new defaults are to use MACRS for tax depreciation and ELG for regulatory depreciation.

2. The CGSCurves sheet uses the projection life, and the c, log g and log s parameters to compute the ELG survival curves, annual depreciation and yearly average net investment (ANI) for each of the 23 plant categories. All plant is assumed to be placed at the beginning of its initial year, and calculations are carried forward for 81 years.

   The first bank of cells in the CGSCurves sheet collects the projection lives and CGS parameters for each plant category from the Inputs sheet. An "h" factor is then computed to scale the 10-year Bell Standard survival curve given by these CGS parameters to match the plant category's given projection life.

   The second bank of cells uses the h-adjusted CGS parameters to compute the fraction of each category's initial investment that survives through to the given year. The equation is:

   Fraction surviving to year t = 10^(log s ·h·t + log g ·c^(ht – 1))

   The third bank of cells computes the fraction of the original investment that is retired each year. For year t, this just the fraction of plant surviving to year t minus the fraction that survived to year t-1.

The fourth bank of cells calculates the fraction of the original plant that depreciates away in each given year. Using the convention that within each ELG, plant depreciates on a straightline basis, total depreciation in year T is as follows:

$$\text{Depreciation in year } T = \sum_{t=1}^{T} [(1/t)\cdot(\text{fraction retired in year } t)]$$

The fifth bank of cells calculated the ANI of each plant category in each year. Because ANI is intended to represent midyear net investment, it is computed as:

$$\text{ANI in year } T = 1 - \sum_{t=1}^{T}(\text{depreciation in year } t) + \tfrac{1}{2}\cdot\text{depreciation in year } T$$

3. The IRSDeprec sheet is a new sheet that contains accelerated depreciation schedules that will be used for tax purposes. Because IRS publication 946 does not contain schedules that assume beginning of year plant placement, this sheet approximates such schedules by adapting slightly this publication's schedules for first quarter and first month placement. This was done by using Table A-2 from IRS Pub 946 "3-,5-,7-,10-,15-, and 20-Year Property Mid-Quarter Convention Placed in Service in First Quarter." Depreciation rates from the last period (which represent a half quarter of depreciation) were added to the first period, and the last period was removed. For 31.5-year property, an adjusted version of Table A-7 was used.

4. The KCCFactor sheet replaces the CCCFactor sheet in computing the CACFs. Instead of computing these factors for each whole year between 1 and 81, it computes the CACF for each plant category based on its precise decimal projection life.

   Separate calculations are made for CACFs based on whether the regulatory depreciation is SL or ELG, and whether the tax depreciation is regulatory or MACRS. Cell banks computing SL regulatory depreciation perform internally their required depreciation and ANI calculations, cell banks computing ELG regulatory depreciation reference depreciation and ANI calculations performed in the CGSCurves sheet.

   Cell banks that compute CACFs using MACRS tax depreciation must adjust each year's ANI to reflect the use of deferred tax reserves to normalize the regulatory ANI. This is done by subtracting the accumulated tax benefit from the end-of-year ANI to compute a beginning-of-year ANI for the next period.

$$\text{Accumulated tax benefit in year } T = \text{tax rate} \cdot \sum_{t=1}^{T}(\text{tax dep in year } t - \text{reg dep in year } t)$$

5. CACFs calculated in the KCCFactor sheet are then transferred to the KF sheet. The operational sheets of the expense module then reference the KF sheet when they require a CACF for computing the levelized cost of a particular type of capital.

If desired, to reduce the size of this expense module, the KF sheet may be range-valued. Then the "KCCFactor," "CGSCurves" and "IRSDeprec" sheets may be deleted from the module. NOTE: Performing the above deletions will prevent the user from further altering cost of capital parameters.

Attachment A

DOCUMENT OFF-LINE

This page has been substituted for one of the following:

o An oversize page or document (such as a map) which was too large to be scanned into the ECFS system.

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